IDAHO SCHOOL BUS WITHDRAWAL FROM SERVICE STANDARDS

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INTRODUCTION

These standards were developed to ensure that all Idaho school buses are maintained in a safe manner. When inspection of a bus reveals a maintenance condition that is below these standards it shall be the duty of the technician performing the inspection to remove the vehicle from service until the discrepancy has been repaired. This standard is the same for both new and used buses and shall be used whenever an Idaho school bus is being inspected. These standards are to be used whenever a 60-day, Annual or New Bus Inspection is being performed by State Inspectors, District, Contractor, or outside contracted maintenance personnel.

INSPECTION ITEM	DEFECT
BRAKE SYSTEM	
Adjustment	Any one brake beyond the allowed adjustment limit (see table #1)
ABS System (Buses manufactured after 1997)	If the warning light fails to illuminate during the cycle or self-check, or a self-diagnostic error is indicated.
Air Brakes	
	Fails to maintain pressure when:
	a) The leakage rate (brakes released) exceeds 2 psi/min.
	b) The leakage rate (brakes applied) exceeds 3 psi/min.
	c) System fails to recover air pressure as recommended.
Low pressure warning system	Fails to function as designed.
Brake Lining	a) Any front lining worn beyond 8/32 of an inch, measured from center of shoe.
	b) Any rear lining worn beyond 8/32 of an inch, measured from center of shoe.
	c) Any pad worn to the recommended replacement measurement or wear mark.
	d) Any lining is broken, not firmly attached to shoe or plate, or is contaminated with oil or grease.
	e) Fails to make contact with drum, is frozen, binding or uneven.
Hydraulic Brakes	
Master Cylinder	a) Reservoir is below minimum level.
	b) Any fluid leak in the master cylinder unit system.
Cylinders and Calipers	Any obvious signs of fluid leakage.
Pedal Reserve	Fails to maintain manufacturer designed height and travel requirements.
Power Assist Units	Fails to function as designed.
Low pressure warning system	Fails to function as designed.
Brake System Components	
Hoses and Tubing	a) A hose with any damage extending through the outer reinforcement ply.
	b) Any bulge or swelling in a hose when brakes are applied.

INSPECTION ITEM	DEFECT
	c) Any restriction due to a cracked, broken or crimped line or hose.
Brake Lining	a) Any front lining worn beyond 3/32 of an inch.
	b) Any rear lining worn beyond 2/32 of an inch.
	c) Any pad worn to the recommended replacement measurement or wear mark.
	d) Any lining is broken, not firmly attached to shoe or plate, or is contaminated with oil or grease.
	e) Fails to make contact with drum, is frozen, binding or uneven.
Drums and Rotors	Any drum or rotor that is cracked, improperly mounted, or worn beyond manufacturers discard specifications. Note: Do not confuse short hairline heat check cracks with flexural cracks.
Parking Brake	Is not present or working as designed.
STEERING SYSTEM	
Travel	Any modification or other condition that interferes with the free movement of any steering component.
Steering Column	a) Any absence or looseness of U-bolt(s) or positioning part(s).
	b) Worn, faulty or obviously repair-welded universal joint(s).
	c) Improperly secured steering wheel.
Front Axel Beam	Any crack(s) or obvious welded repair.
Steering Gear Box	a) Any loose or missing mount bolt(s).
	b) Any crack(s) in gear box or mounting brackets.
	c) Any obvious welded repair.
Pitman Arm	a) Any looseness of the pitman arm on the steering gear output shaft.
	b) Any obvious welded repair.
Power Steering	a) A loose auxiliary power assist cylinder.
	b) An inoperable power steering pump.
	c) A fluid leak on the pressure side of the power steering pump.
	d) Any empty fluid reservoir.

INSPECTION ITEM	DEFECT
Ball and Socket Joints	a) Any movement under steering load of a nut stud.
	b) Any movement in any threaded joint, or stud nut in the direction of the ball stud using 50-100 lbs. of hand pressure measured with a scale.
	b) Any movement in any threaded joint, or stud nut in the direction of the ball stud using 50-100 lbs. of hand pressure measured with a scale.
	c) Any obvious welded repair.
King Pins	a) If Horizontal movement exceeds 3/16 in. for wheels 20 in. and larger or 1/8 in. for wheels under 20 in. Pry bar may be used to lift tire up and down, and in and out.
	b) If vertical movement exceeds 0.100 in. or the manufacturer's specification.
Tie Rods & Drag Links	a) Loose clamp(s) or clamp bolt(s) on tie rod or drag links.
	b) Any looseness in any threaded joint.
	c) Any movement between any linkage member and its attachment other than rotational that measures more than 1/8 inch (.125) with hand pressure of 100 lbs., measured with a scale.
Nuts	Any loose or missing fasteners on tie rods, pitman arms, drag links, steering or tie rod arms.
Hoses	Any damaged or kinked hoses or lines.
Steering Wheel Free Play	Fails to meet the performance test. (see table # 2)
SUSPENSION SYSTEMS	
Axel Parts/Members	a) Any U-bolt or other spring to axle clamp bolt(s) cracked, broken, loose, or missing.
	b) Any spring hanger(s), or other axle positioning parts cracked, broken, loose, or missing that results in shifting of an axle from its normal position.

INSPECTION ITEM	DEFECT
	c) Any worn (beyond manufacturer's specifications) or improperly assembled U-bolt, shock, king pin, ball joint, strut, air bag or positioning component.
	d) Any spring hanger, assembly part or leaf, broken or missing.
	e) Any broken coil spring.
Shock Absorbers	Any that are missing or broken.
CHASSIS/FRAME/UNIBODY	
Frame	a) Any cracked, loose, sagging or broken frame side rail.
	b) Any obvious bend or damage resulting from a collision.
	c) Any worn or loose mounting hole.
Cross Members	Any weight bearing cross member, outrigger or other structural support that is cracked, missing or deformed.
Outriggers/Body Supports	Any missing, broken, shifted or corroded part that would affect the safe operation of the vehicle.
Bumpers	Any bumper missing or not secured.
EXHAUST SYSTEM	
Leaks	Any part of the exhaust system leaking, or discharging under the passenger or engine compartment.
Heat Shields	a) If any required heat shields are missing.
	b) If any part of the exhaust system is closer than 2 inches from any part of the fuel or brake system and not protected by heat shields.
GAS OR DIESEL FUEL SYSTEMS	
Fuel Tanks	a) Any cap is missing, does not prevent spillage or is not the proper type.
	b) Any tank is leaking or cracked, has broken welds. (note: a leaking tank should not be confused with fuel spillage from filling the tank.)
	c) Any cracked, missing or loose mounting strap safety cage.
Pumps and Lines	a) Any cracked, leaking or insecure fuel line.

INSPECTION ITEM	DEFECT
	b) When any internal braid is exposed at the first layer on a braided line.
	c) If the pump leaks, is insecure or physically damaged.
DRIVE SHAFT	
Universal Joints	a) Any loose, worn, missing or damaged U-clamp.
	b) Any free play is evident.
	c) The center bearing is loose or worn beyond manufacturer specifications.
DIFFERENTIAL	
	If the housing is cracked or damaged.
TRANSMISSION	
Automatic	
	If the engine stars in any gear other than neutral or park.
Standard	
	a) If the clutch is not properly adjusted and allows the vehicle to move with the pedal fully depressed.
	b) If the starter interlock allows the engine to start without the clutch being depressed. (If so equipped).
ENGINE	
Components	Any critical component that fails to function as designed.
Leaks	Any fluid leaks that would affect the safe operation of the engine.
Accelerator Pedal	If the pedal is binding and/or the engine will not return to an idle.
TIRES/WHEELS/HUBS	
Tire Tread Depth	a) Any steering axle tire worn less than 4/32 in.
	b) Any drive axle tire worn less than 2/32 in.

INSPECTION ITEM	DEFECT
Tire Sidewall	a) Any sidewall that is cut, worn, or damaged to the extent that the ply cord is exposed.
	b) Any observable bump, bulge, or knot related to sidewall or tread separation.
Tire Inflations	Tire is flat or has a noticeable leak.
Tire Type	Not of proper type (load range, size. Mismatched, etc.)
Wheels/Rims/Spiders	a) Any nuts, bolts, studs or lugs are broken, missing, damaged or loose.
	b) Any wheels/rims cracked, damaged, not properly seated or repaired by welding.
Hubs	Excessive wheel bearing play that exceeds 3/16 of an inch for wheels 20 in. and larger or 1/8 in for wheels under 20 in. measured at the bottom of the tire at the floor. Pry bar may be used to lift tire for movement.
AISLES	
Clearance	Aisle does not have the required clearance (12 inches).
Obstructions	There are objects blocking aisles or exits.
ELECTRICAL	
Wiring	Any required wire or electrical component that is charred or showing evidence of being burnt or exposed.
Battery	
Condition	If the battery is cracked or leaking or has excess corrosion.
Wires	Wiring is exposed or loose.
Securement	Battery is not secured.
WINDSHIELD WIPERS	
Operation	System fails to operate.
Condition	A blade is missing or broken.

INSPECTION ITEM	DEFECT
BODY INTERIOR	
Panels	Any panel (ceiling, side, wheel well, etc.) protruding, having sharp edges, or not secured, that may cause injuries.
Floors	Floor pan or inner panels that have excessive perforated areas or openings sufficient to cause a hazard to an occupant.
Step Well	Any part of the step well or support structure that is damaged to the point that it could cause injury to a person or persons entering or exiting the bus.
Step Treads	Any condition that would cause a tripping hazard.
Handrails	a) Any that are not properly secured or damaged to the extent they could cause and injury.
	b) Fails the nut/drawstring test or has not complied with the NHTSA recalls. (See table #3)
Seats/Barriers	a) Any seat or barrier that is not properly secured to the bus body.
	b) Seat spacing that fails to comply with FMVSS 222.
	c) Any seat/barrier material so defective that compromises the integrity of the occupant protection and compartmentalization
Seat (Driver)	a) Fails to adjust or hold proper adjustment.
	b) Any part of the driver's safety restraint assembly is missing, not properly installed or so defective as to prevent proper securement.
Doors (Service)	a) Door does not open or close properly.
	b) Door control handle does not lock in the closed position.
	c) Door is equipped with a padlock or similar non OEM locking device.
Doors (Emergency Exits)	a) Any emergency door that does not open freely or completely as designed.

INSPECTION ITEM	DEFECT
	b) Any door(s) warning device that is defective. If a bus is equipped with buzzers located at the door and in the dash area the dash area buzzer must work.
	c) Door or roof hatch is equipped with a padlock or similar non OEM locking device.
	d) Door holding device is missing or inoperative or fails to hold door open.
	e) Any emergency door not properly labeled outside in compliance with FMVSS 217.
	f) Any emergency door equipped with a padlock, vandal lock, or non OEM locking device, that when locked allows the engine to start.
Windows	a) Any window that is shattered, broken through or missing.
	b) If the driver's side of the windshield has chips, clouding or cracks that obscure the drivers vision.
	c) Anything mounted on the dash in front of the windshield that would obscure the driver’s vision (such as fans, VCR's, radios, etc.)
	d) Every school bus windshield shall be free of discoloration or other damage in that portion thereof extending upward from the height of the topmost portion of the steering wheel, but not including a 2 inch border at the top and a 1 inch border at each side of the windshield or each panel thereof, except that discoloration and damage as follows are allowed: (1) Coloring or tinting applied in manufacture, for reduction of glare; (2) Any crack that enters the drivers vision area of the road or mirrors; (3) rock chip over 1/4 inch in size that has not been repaired to the extent that it does not hinder the drivers vision of the roadway.
Windows (Emergency Exits)	a) Any emergency window that fails to open properly.

INSPECTION ITEM	DEFECT
	b) Any bus that lacks the required number of Emergency windows or roof hatches in compliance with FMVSS 217.
	c) Any emergency window not properly labeled outside in compliance with FMVSS 217.
Defrosters	Any defroster fails to operate.
BODY EXTERIOR	
Panels, Rub Rails, Trim	Any body part that is loose, torn, dislocated, or protruding from the surface of the bus, creating a hazard.
Compartment Doors	Any engine, battery or other door that cannot be properly secured.
Mirrors	Any required mirror that is missing, broken, discolored or will not hold a set adjustment.
LAMPS AND SIGNALS	
Lights	a) Any one of the following lights not working: Brake, turn signal, headlight (low beam), school bus warning light (amber or red).
	b) Stop arm lamp not working
	c) Emergency hazard warning lamp system not working
Crossing control device	Fails to extend or retract
Horn	Fails to function.
Gauges/Brake Warning	Any critical brake, tell-tale light, buzzer, or gauge that fails to function as designed.
Stop Arm	Any stop arm that fails to function properly.
EMERGENCY EQUIPMENT	
Fire Extinguisher	a) Any required fire extinguisher, which is missing or not properly secured or readily accessible to the driver.
	b) Any extinguisher that is rated less than a 5lb. ABC, fully charged, has no pressure gauge or valid annual inspection tag.
	c) Is damaged in any way.

INSPECTION ITEM	DEFECT
First Aid Kit	a) Any kit that is missing or not located in the driver compartment.
	b) Any kit that's contents have been depleted to the point of rendering it as ineffective in meeting its purpose.
Body Fluids Kit	a) Any kit that is missing or not located in the driver compartment.
	b) Is missing any of its required components rendering it ineffective.
Webbing (belt) cutter	Missing
WHEELCHAIR VEHICLES	
Lift	a) Does not function as designed.
	b) Any hydraulic fluid leakage during operation.
	c) If the required lift kill switch is not operating properly.
	d) If lift is manufactured after April 1, 2005 it shall have platform outer barrier and inner roll stop, wheelchair retention device, vehicle interlock to prevent forward or rearward movement of the vehicle unless the lift is stowed, and manual backup operation. If any component is missing or does not function properly as designed.
Wheelchair Tie Downs	
	When vehicles are transporting wheelchairs:
	a) Tie downs are missing or damaged.
	b) Tie downs are missing certification tags.
	c) Tie downs are not in compliance with FMVSS 209, 210 & 222.
Occupant Restraints	
	When occupant restraints are required:
	a) Restraints are missing or damaged
	b) Restraints are missing certification tags.
	c) Restraints are not in compliance with FMVSS 209, 210 & 222.

TABLE 1: BRAKE ADJUSTMENTS **Brake Adjustment: Shall be less than those specification contained herein relating to "Brake Adjustment Limit". (Dimensions are in inches.)**

CLAMP TYPE BRAKE CHAMBER DATA

TYPE	OUTSIDE DIAMETER	BRAKE ADJUSTMENT LIMIT
6	4 1/2	1 1/4
9	5 1/4	1 3/8
12	5 11/16	1 3/8
16	6 3/8	1 3/4
20	6 25/32	1 3/4
24	7 7/32	1 3/4
30	8 3/32	2
36	9	2 1/4

'LONG STROKE' CLAMP TYPE BRAKE CHAMBER DATA

TYPE	OUTSIDE DIAMETER	BRAKE ADJUSTMENT LIMIT
16	6 3/8	2.0
20	6 25/32	2.0
24	7 7/32	2.0
24*	7 7/32	2.5
30	8 3/32	2.5
* For 3" maximum stroke type 24 chambers		

WEDGE BRAKE DATA

The combined movement of both brake shoe lining scribe marks shall not exceed 1/8 inch (3.18mm)

BOLT TYPE BRAKE CHAMBER DATA

TYPE	OUTSIDE DIAMETER	BRAKE ADJUSTMENT LIMIT
A	6 15/16	1 3/8
B	9 3/16	1 3/4
C	8 1/16	1 3/4
D	5 1/4	1 1/4
E	6 3/16	1 3/8
F	11	2 1/4
G	9 7/8	2

ROTO-CHAMBER DATA

TYPE	OUTSIDE DIAMETER	BRAKE ADJUSTMENT LIMIT
9	4 9/32	1 1/2
12	4 13/16	1 1/2
16	5 13/32	2
20	5 15/16	2
24	6 13/32	2
30	1 1/6	2 1/4
36	7 5/8	2 3/4
50	8 7/8	3

TABLE 2: STEERING WHEEL FREE PLAY

Steering wheel free play shall not exceed the requirements listed in the following chart:

STEERING WHEEL DIAMETER	MANUAL SYSTEM MOVEMENT 30º	POWER SYSTEM MOVEMENT 45º
16" (41cm)	2" (5.1 cm)	4 1/2" (11.5cm)
18" (46 cm)	2 1/4" (5.4 cm)	4 3/4" (12 cm)
20" (51 cm)	2 1/2" (6.4 cm)	5 1/4" (13.5 cm)
22" (56 cm)	2 3/4" (7 cm)	5 3/4" (14.5cm)

Table # 3

The Handrail Inspection Tool and Procedure

The inspection tool is inexpensive and the procedure for detecting potentially fatal handrail designs is quite simple. The inspection tool is a standard ½" hex nut measuring ¾" across the flats. This nut is tied to 1/8" thick cotton cord measuring 36" in length with overhand knots. The drawstring should have a minimum length of 30" when tied to the nut and attached so that a pull of at least ten pounds does not separate the nut from or break the drawstring.

Steps to conduct a handrail inspection are:

- Stand on the ground outside of the bus
- Drop the inspection tool between the handrail and step well wall, simulating the typical way students exit the bus
- Draw the inspection tool through the handrail in a smooth, continuous slow motion
- Repeat this procedure several times (minimum of three times)

Note: It is important to drop the inspection tool over the handrail in such a way as to simulate a child exiting the bus. This is a drop and drag test. Do not create a snagging situation by placing the nut in an area that would not be exposed to a drawstring or other articles.

Inspection Results

Take the bus out of service and repair it if the inspection tool catches or snags anywhere on the handrail. If the nut separates from the drawstring or the drawstring breaks, reassemble the tool and retest. If the inspection tool pulls freely without catching or snagging, the bus should not be rejected.